

REMARKS

In the Final Office Action of 11/27/07, the Examiner rejected claims 16-34. In this Response, claims 17 and 26 are amended and claims 18 and 27 are canceled. As such, claims 16, 18-26, and 28-34 will be pending after entry of this Response.

Improper Final Office Action

Applicants submit that the issuance of the Final Office Action is improper at this time. MPEP 1207.04 states:

The Office action containing a new ground of rejection may be made final if the new ground of rejection was (A) necessitated by amendment, or (B) based on information presented in an information disclosure statement under 37 CFR 1.97(c) where no statement under 37 CFR 1.97(e) was filed. See MPEP § 706.07(a).

[Emphasis added.]

Applicants submit that neither situation (A) or (B) required in MPEP 1207.04 exists to allow issuance of a Final Office Action at this time. The only new ground of rejection in the Final Office Action is the rejection under 35 U.S.C. 102(e) based on U.S. Patent No. 6,061,675 (hereinafter Wical). The claims in the present case have not been amended since the supplemental preliminary amendment filed on 2/14/2004. As such, the new ground of rejection was not necessitated by amendment. Also, the Wical reference was not based on information presented in an information disclosure statement under 37 CFR 1.97(c). As such, the issuance of the Final Office Action is improper under MPEP 1207.04 and Applicants request that the Final Office Action be withdrawn.

Rejection of the Claims Under 35 U.S.C. § 101

In the Office Action, claims 16 - 34 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In rejecting the claims for being directed to non-statutory subject matter, the Examiner asserts that the claims are not limited to practical applications in the technological arts. The Examiner argues, in part, that the claims recite manipulation of abstract “terminological information” and do not produce a “useful, concrete and tangible” result to have a practical application.

The Examiner relies on *In re Warmerdam* and *AT&T Corp. v. Excel Communications, Inc.* In discussing the *In re Warmerdam* opinion, the Federal Circuit, in *AT&T Corp. v. Excel Communications, Inc.*, opinion, concluded:

Whether one agrees with the courts conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions and discoveries that may be patented under 101. *AT&T Corp. v. Excel Communications, Inc.* 50 USPQ2d 1147 (Fed. Cir. 1999).

It is a generally accepted principle that abstract ideas or the mere manipulation of abstract ideas are not patentable (*In re Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759) and that the claimed invention must accomplish a practical application that is a “useful, concrete and tangible result,” (*State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02). Applicant submits that the claims of the subject application, however, are not abstract ideas or the mere manipulation of abstract ideas and accomplish a “useful, concrete and tangible result.”

Claim 16 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;

parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;

determining whether at least one input term exists as a node in said knowledge base;

generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base; and

extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

Claim 17 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship information specifying ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms; and

integrating said logical structure of said input terms into said knowledge base, said integrating comprising:

determining whether at least one input term exists as a node in said knowledge base;

if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term; and

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships.

Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17.

In response to Applicant's argument in the 10/14/2004 Response to Office Action, the Examiner asserts that the claim term, "terminological information", is a term of variable and vague meaning, and rejects Applicant's examples set forth in the Specification. (1/12/05 Final Office Action, page 10). In rejecting Applicant's arguments, the Examiner noted that the "claims are to be judged by their limitations."

The claims in the Present Application set forth a definition for the claim term, "terminology information." Independent claims 16, 17 and 26 recite:

input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms.

The terms used in a claim are given their ordinary meaning unless it appears from the patent that the inventor used them differently. *ZMI Corp. v. Cardiac Resuscitator Corp.*, 1844 F.2d 1576, 1578 (Fed. Cir. 1988). It is clear from the claim recitation that "terminology information" connotes terms or words and information that specifies relationships between the terms or words (e.g., ontological information). As such, claims 16, 17 and 26 ascribe a clear and definite meaning to the "terminology information" claim term.

When interpreting claims, resort should be made to the claims at issue, the specification, and the prosecution history of the patent. *Id.* The Specification provides clear support for a claim interpretation that input terminology connotes terms or words and information that specifies relationships between the terms or words. Table 3 shows example input terminological information formatted in the ISO-2788 format. (*Specification*, page 20, lines 21 – 22). For the example of Table 3, the input terms are “Congress Party of India”, “BJP” and “Bharatiya Janata Party.” The information, which specifies relationships between terms, includes: a Broader Term (“BT”) relationship between “Congress Party of India” and “politics”; a synonym (SYN) relationship between “BJP” and “Bharatiya Janata Party”; a Broader Term (“BT”) relationship between “Bharatiya Janata Party” and “politics”, and a related term (“RT”) relationship between “Bharatiya Janata Party” and “Hinduism.” Applicant is not arguing that the example is part of the claimed invention. Instead, the example provides a context for interpreting the claim limitation. As such, Applicant respectfully contends that the claim limitation, input terminology, has a definite meaning in light of the claims recitation and specification.

The Examiner asserts that the term “terminological information” has a variable and vague meaning and include within its scope purely abstract information, such as philosophical information, mathematical information, etc. (page 5 and 11 of the Final Office Action). As such, the Examiner argues that the use of the term “terminological information” in these claims render the claims non-statutory *per se* since the term is an abstract construct. As established by case law and as stated in the MPEP, however, the mere inclusion of a term that on its own may comprise non-statutory matter does not

render the entire claim non-statutory. Rather, the claimed invention as a whole must accomplish a practical application to produce a “useful, concrete and tangible result,” (*State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02). As stated in MPEP 2106, claims define non-statutory subject matter if they:

- consist solely of mathematical operations without some claimed practical application (i.e., executing a “mathematical algorithm”); or
- simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 145859) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.

[Emphasis added.]

MPEP 2106 further states that Examiners:

have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101. Compare *Musgrave*, 431 F.2d at 893, 167 USPQ at 289; *In re Foster*, 438 F.2d 1011, 1013, 169 USPQ 99, 101 (CCPA 1971).

[Emphasis added.]

The line of analysis used by the Examiner in rejecting the claims based on inclusion of the term “terminological information” is not consistent with the established case law or the MPEP. As stated above, the Examiner states that since the term “terminological information” can include within its scope abstract information (e.g., philosophical information, mathematical information, etc.), the claims that contain the term are non-statutory subject matter per se. Using this line of reasoning, a claim for a computer application that receives and processes “information” would be non-statutory subject matter per se since the “information” may include abstract information (e.g., Pi, radians, square root, etc.). Similarly, a claim for a telecommunications system that

transmits and receives “information” would also be non-statutory subject matter per se since that “information” may include such abstract information. This type of reasoning is clearly not supported by the case law or the MPEP.

In other words, simply because a claim contains a term that, recited solely on its own is non-statutory, does not automatically render the entire claim non-statutory as well. Applicant agrees that the term “terminological information” recited on its own with no other further limitations is non-statutory subject matter. However, the entirety of a claim must be analyzed to determine if it is non-statutory subject matter rather than a single individual term used in the claim. For purposes of determining non-statutory subject matter under 101, Applicant submits that what scope of information (e.g., philosophical information, mathematical information, etc.) is included in the term “terminological information” is irrelevant in the present claims. Rather, in the present claims, it is the processing steps that are performed on the “terminological information” (whatever that information may or may not include) and whether these steps produce a “useful, concrete and tangible result” that is at issue.

The Examiner argues that the claims provide only a manipulation of an abstract construct (terminology information) and do not produce a “useful, concrete and tangible result.” The mere fact that terminological information may include abstract information does not mean the claims solely recite mere manipulations of abstract information. Using the Examiner’s line of reasoning to the example given above, a claim for a telecommunications system that transmits and receives information is a mere manipulation of information and non-statutory subject matter since the transmitted and

received information may include abstract information. Again, this type of reasoning is clearly not supported by the case law or the MPEP.

Applicant submits that the computer automated reception, analysis, and integration of new terminological information into a knowledge base stored on a computer is, on its face, a “useful, concrete and tangible result,” and thus more than a mere manipulation of the terminological information. In addition, the Specification describes a useful purpose that produces a tangible result from the claimed invention:

The integration of user specified terminological information into a built-in knowledge base has application for use in specific domains. For example, an English language newspaper in India may buy a natural language processing system (e.g., Oracle ConText) to provide search capability for their on-line edition. However, the newspaper may find that the built-in knowledge base has little or no knowledge of Indian politics and economics. For this hypothetical, the user desires to expand the built-in knowledge base to include terminological information on politics and economics. [Specification, page 20, lines 7 – 14.]

The automated integration of new information into a knowledge base is, in itself, a “useful, concrete and tangible result” and the Specification describes a useful purpose that produces a tangible result from the claimed invention. As such, the Examiner has not met the *prima facie* burden of establishing that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas (as required by MPEP 2106). According, taken as a whole, the claims of the present invention are of statutory subject matter.

Rejection of the Claims Under 35 U.S.C. § 112, First Paragraph

Claims 16-34 were rejected under 35 USC § 112, First Paragraph, due to the rejection under 35 USC § 101. As stated in the reasons given above, Applicant submits that the rejection under 35 USC § 101 is improper. Also, Applicant has provided sufficient disclosure to one of ordinary skill in the art to practice the invention without undue experimentation. The disclosure includes detailed flow charts, textual description, and examples of the claimed invention. As such, the specification and drawings provide an enabling disclosure for the claimed invention. Therefore, Applicant also submits that the rejection under 35 USC § 112, First Paragraph, is improper.

Rejection For Double Patenting

On page 29 of the Office Action, claim 16 was rejected for obviousness-type double patenting in view of claim 1 of US Patent 6,654,731. Applicants are assuming this section was included by mistake as a terminal disclaimer was filed on 7/24/07 for US Patent 6,654,731.

Rejections under 35 U.S.C. 102

In the Office Action, the Examiner rejected claims 16, 17, and 26 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,061,675 (hereinafter Wical). The Applicants have amended claims 17 and 26, as the rejection might be applied to the amended claims, respectfully traverse. Claim 16 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.”

The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;

parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;

determining whether at least one input term exists as a node in said knowledge base;

generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base; and

extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

[Emphasis added.]

Wical does not disclose, teach, or even suggest each recited feature of claim 16.

For example, Wical does not disclose, teach, or even suggest parsing input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base, determining whether at least one input term exists as a node in said knowledge base, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base, and extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

Col. 53, lines 40-57 of Wical (as cited by the Examiner) discloses that “The knowledge catalog processor parses the knowledge catalog 100 to compare the content carrying words with the knowledge concepts stored in the static ontologies.” However, “parsing” input terminology information is only one limitation of many required by claim

16. Additionally required is “parsing” input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base. Wical does not teach or suggest such a method of parsing.

As Wical does not teach or suggest parsing input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base, Wical also does not teach or suggest generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base, as also required in claim 16. It then further follows that Wical also does not teach or suggest extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term, as also required in claim 16. For the above reasons, Applicants submit that claim 16 is in allowable form.

Amended claim 17 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship information specifying ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms; and

integrating said logical structure of said input terms into said knowledge base, said integrating comprising:

determining whether at least one input term exists as a node in said knowledge base;

if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term; and

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships.

Wical does not disclose, teach, or even suggest each recited feature of claim 16.

For example, Wical does not disclose, teach, or even suggest storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base, generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms, determining whether at least one input term exists as a node in said knowledge base, if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term, and if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships.

Col. 53, lines 40-57 of Wical (as cited by the Examiner) discloses:

The knowledge catalog processor processes content carrying words for use by the theme vector processor. Specifically, the knowledge catalog processor generates the noun or nominal forms of the content carrying words in the input discourse. The knowledge catalog processor parses the knowledge catalog 100 to compare the content carrying words with the knowledge concepts stored in the static ontologies. If the content carrying word is not contained in at least one domain in the static ontologies, then the word is noted as being not yet understood. If the word is stored more than once in the static ontologies, then the word is classified as ambiguous. If the word is stored only once in the static ontologies, then the word is classified as

non ambiguous. If a word is classified as non ambiguous, then the theme vector processor determines the concept of the word from the static ontologies. In a preferred embodiment, a minimum of 50% of the content carrying words must be recognized as non ambiguous.

However, Wical does not teach or suggest storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base. As Wical does not teach or suggest mapping of said relationship information, Wical also does not teach or suggest generating a logical structure from said relationship information, as also required in claim 17. It then further follows that Wical also does not teach or suggest determining whether at least one input term exists as a node in said knowledge base, if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term, and if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships, as is further required in claim 17.

For the above reasons, Applicants submit that claim 17 is in allowable form. Claims 19-25 are dependent upon claim 17, and thus are allowable for at least the same reasons as claim 17. Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17. Claims 28-34 are dependent upon claim 26, and thus are allowable for at least the same reasons as claim 26.

CONCLUSION

Based on the foregoing remarks, Applicants believe that the application is in condition for allowance. If the Examiner has any questions regarding the case, the Examiner is invited to contact Applicants' undersigned representative at the number given below.

Respectfully submitted,

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